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From the Editor

This is the 160th issue of the newsletter! The committee is currently in the process of reviewing the benefits of membership. We would like to hear what would make more people become members, and what might turn them away (hopefully not much!). Look out for a survey about this from our Memberships Officer in the coming months.

This is quite a big issue, thanks to several contributors. We have a review of the fully revised edition of Ghosts of Gondwana from Adrian Paterson. Yvonne Taura has contributed an article about the beautiful new living document on the importance of repo (wetlands) and the role of stories and local people in restoring of them. Leilani Walker has contributed an insight into a creative project to raise the insight of New Zealand insects. And Ben Paris contributed an update from the Auckland Pestival event. Enjoy the read.

Newsletter Editor: Angela Simpson. Email: newsletter@nzes.org.nz
Deadline for submissions for the next issue of this newsletter is **Friday 15th September 2017**

Illustrate Ecology

A restored connection. Photo and story: Angela Simpson

This large koromiko (*Hebe stricta*) was been planted as part of the restoration project on Moutohorā (Whale Island), Bay of Plenty. One of the largest colonies of grey-faced petrel (tītī) lives on this island. When tītī were harvested the leaves of the koromiko were often used as a remedy for stomach aches. The entrance to a tītī burrow is shown below the planted koromiko and is an example of restoring cultural and ecological history from a highly modified state.

Ecotones – new ecological research

Bruce Burns

A selection of recently published research on or relevant to New Zealand ecology (except that published in the New Zealand Journal of Ecology or 'in press').

1. *Ecological responses within New Zealand marine reserves: reassertion of top-down control.*

New Zealand was amongst the first countries to establish a marine reserve (1975; Cape Rodney to Okakari Point Marine Reserve), and now has 44 marine reserves around its coastline. Most of these are no-fishing zones, so protection allows the direct recovery of previously fished species, but also causes indirect ecological effects (trophic cascades) caused by the re-establishment of these populations. Edgar *et al.* (2017) have recently reported on biological surveys of eight north eastern New Zealand marine reserves and comparable fished reference sites to examine the ecological effects of no-fishing marine reserves. In

reserves, effects of protection included a much higher abundance and biomass of large predatory fishes such as snapper (40 times higher biomass within reserves than out), more rock lobsters, lower sea urchin numbers, and the recovery of extensive kelp forests. Although each reserve showed some idiosyncratic differences with fished reference sites, major differences were consistent across sites. Another striking result was that the small proportion (~0.2%) of the north eastern New Zealand coastal zone within marine reserves held a disproportionately large proportion of the marine biodiversity of the region. These results are a stunning confirmation of the value of no-take marine reserves, and provide a strong case for further expansion of this network.

Edgar GJ, Stuart-Smith RD, Thomson RJ, Freeman DJ 2017. Consistent multi-level trophic effects of marine reserve protection across northern New Zealand. PLoS ONE 12 (5): art. no. e0177216.

2. The unusual case of serotiny in mānuka.

Mānuka (*Leptospermum scoparium*) is a common pioneering/stress-tolerant species in New Zealand, closely related to Australian *Leptospermum* species. One of the more distinctive traits noted for the New Zealand species is that its small seed capsules remain closed and accumulate on trees over several years, then release seed immediately following fire (serotiny). The occurrence of such an adaptation to fire is puzzling as fire was supposedly rare in prehuman New Zealand ecosystems. So how did serotiny evolve in mānuka? Battersby *et al.* (2017) have tackled this question by recognising (1) that the New Zealand species arrived here from fire-adapted ecosystems in Australia several million years ago, and (2) that the level of serotiny in New Zealand mānuka populations is variable. They therefore looked for sites within New Zealand with long-term fire histories (covering most of the Holocene) and examined capsule morphology on nearby natural mānuka populations. They found that mānuka individuals were clearly serotinous (capsules closed) or non-serotinous (capsules open) with few that could be considered intermediate. They also found that site populations were either mostly serotinous or non-serotinous, and that the serotinous populations occurred predominantly in northern lowland wetlands that experience warm and dry climates. These northern wetlands were also those with the greatest long term fire histories over the Holocene. They concluded that the ancestral mānuka arrived in New Zealand from Australia already with serotiny as an adaptation to fire, and that this character has been maintained within populations in fire-prone northern wetlands ever since. Southern populations of mānuka that did not experience regular fire lost the serotinous trait.

Battersby PF, Wilmshurst JM, Curran TJ, McGlone MS, Perry GLW 2017. Exploring fire adaptation in a land with little fire: serotiny in *Leptospermum scoparium* (Myrtaceae). Journal of Biogeography 44: 1306-1318.

3. New methods for bioacoustic monitoring analysis

Acoustic recording devices that are able to record continuously in remote sites over long time periods are now widely available. They provide huge potential to monitor and research wildlife communities and populations. An issue with their use, however, is that they quickly generate huge amounts of data and methods for processing these data efficiently have been problematic, particularly to recognise the specific sounds of species of interest from the background milieux. Current analytic software is also expensive and difficult to use for non-experts. A New Zealand-Australian research group (Ranjard *et al.* 2017) has recently developed a new software interface, MatlabHTK, which accesses methods developed for speech recognition, for use with such data. This facility provides cheap access to sophisticated analytical techniques in an easy-to-use format. As an example of the use of

these techniques, the group has successfully analysed recordings of the common diving petrel, a cryptic seabird species, to discover its nocturnal presence and behaviour. Interpreting the ecological soundscape for insights into where species occur and what they do has now become easier with this development.

Ranjard L, Reed BS, Landers TJ, Rayner MJ, Friesen MR, Sagar RL, Dunphy BJ 2017. MatlabHTK: a simple interface for bioacoustic analyses using hidden Markov models. Methods in Ecology and Evolution 8: 615-621.

4. What might indicate success in planted forest restoration?

Restoration of native forest ecosystems by initially planting early successional species is occurring over large areas throughout New Zealand, with the assumption that these areas will develop into mature, self-sustaining forests. Monitoring whether these areas do actually reach this goal is rare in New Zealand, and there is little knowledge of what post-planting management if any should occur to ensure efficient achievement of restoration success. Wallace et al. (2017) argue that two indicators of restoration success for these forests are the spontaneous regeneration of native trees and colonisation by epiphytes. They surveyed a chronosequence of restored forests and remnant reference forests within Hamilton and New Plymouth to understand what constrained the achievement of restoration success based on these two indicators. They identified a critical threshold of forest development occurred at about 20 years after planting with forest basal areas of around $27m^2$/ha when understorey light levels were low, herbaceous groundcover was reduced, humidity and soil temperatures had stabilised, and some trees were large enough to act as epiphyte hosts. At and above this threshold, they found that native tree regeneration and epiphyte colonisation were promoted, as long as adequate propagules were available. These results suggest that ongoing management should target actions that accelerate canopy closure and compensate for propagule availability when limited.

Wallace KJ, Laughlin DC, Clarkson BD 2017. Exotic weeds and fluctuating microclimate can constrain native plant regeneration in urban forest restoration. Ecological Applications 27: 1268-1279.

5. Camouflage over puriri moth holes also buffers temperature

The pale, velvety green puriri moth is New Zealand's largest moth. Its larvae create burrows within a range of tree species, including the puriri, and it feeds on the cambial sap of the tree at the burrow entrance. This creates diamond-shaped wounds on the trunk surface but while the larvae are still active, these wounds are covered by a silk webbing that accurately mimics the bark surface. The function of this webbing has been examined in a recent study by Yule and Burns (2017). They hypothesised that webbing could act to camouflage the location of larvae from predatory birds, e.g., kaka, and/or could act to maintain higher temperatures inside larval tunnels. By comparing the spectral reflectance of webbing, adjacent bark, and feeding wounds, and by manipulating the contrast of webbing to bark using paint, they established that webbing was significantly less visible to kaka than feeding wounds, but that contrast to bark did not change predation risk of the larvae. They also found that tunnels with webbing were significantly warmer than those without, and this influenced rate of larval development. Therefore, it seems that this webbing fulfils two functions – camouflage and thermal regulation. The lesson here is not to assume single causes of adaptive advantage in the evolution of characters.

Yule K, Burns K 2017. Adaptive advantages of appearance: predation, thermoregulation, and color of webbing built by New Zealand's largest moth. Ecology 98: 1324-1333.

Other recent publications on New Zealand ecology. Apologies if I have missed your publication in my search. If I have, please send a citation to b.burns@auckland.ac.nz so I can include it in the next Ecotones.

Aguilar, G.D., Blanchon, D.J., Foote, H., Pollonais, C.W., Mosee, A.N. 2017. A performance based consensus approach for predicting spatial extent of the Chinese windmill palm (*Trachycarpus fortunei*) in New Zealand under climate change. Ecological Informatics 39: 130-139.

Barnes, R.S.K. 2017. Are seaward pneumatophore fringes transitional between mangrove and lower-shore system compartments? Marine Environmental Research 125: 99-109.

Bell, B.D. 2017. Foraging flight times in the New Zealand (*Rhipidura fuliginosa*) and grey (*R. albiscapa*) fantails. Notornis 64: 44-47.

Beveridge, P., Glenny, D., Smissen, R. 2017. *Cephaloziella tahora* Bever. & Glenny, a new species of *Cephaloziella* (Jungermanniopsida, Cephaloziellaceae) from eastern Taranaki, New Zealand. Journal of Bryology 39: 57-65.

Boddy, N.C., McIntosh, A.R. 2017. Temperature, invaders and patchy habitat interact to limit the distribution of a vulnerable freshwater fish. Austral Ecology 42: 456-467.

Boehler, S., Strecker, R., Heinrich, P., Prochazka, E., Northcott, G.L., Ataria, J.M., Leusch, F.D.L., Braunbeck, T., Tremblay, L.A. 2017. Assessment of urban stream sediment pollutants entering estuaries using chemical analysis and multiple bioassays to characterise biological activities. Science of the Total Environment 593-594: 498-507.

Brockerhoff, E.G., Chinellato, F., Faccoli, M., Kimberley, M., Pawson, S.M. 2017. Effects of elevation and aspect on the flight activity of two alien pine bark beetles (Coleoptera: Curculionidae, Scolytinae) in recently-harvested pine forests. Forest Ecology and Management 384: 132-136.

Brown, G., Hausner, V.H. 2017. An empirical analysis of cultural ecosystem values in coastal landscapes. Ocean and Coastal Management 142: 49-60.

Champeau, O., Cavanagh, J.A.E., Sheehan, T.J., Tremblay, L.A., Harding, J.S. 2017. Acute toxicity of arsenic to larvae of four New Zealand freshwater insect taxa. New Zealand Journal of Marine and Freshwater Research 51: 443-454.

Chatterton, J., Pas, A., Alexander, S., Leech, M., Jakob-Hoff, R., Jensen, B.P., Digby, A. 2017. Concentrations of calcium and 25-hydroxycholecalciferol (vitamin D_3) in plasma of wild kākāpō (*Strigops habroptilus*) living on two islands in New Zealand. New Zealand Veterinary Journal 65: 198-203.

Chivite, I. 2017. A new field data collection GIS tool for smart conservation. Digital transformation in New Zealand. GIM International 31: 20-21.

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Collier, K.J., Leathwick, J.R., Rowe, D.K. 2017. Assessing vulnerability of New Zealand lakes to loss of conservation value from invasive fish impacts. Aquatic Conservation: Marine and Freshwater Ecosystems 27: 534-546.

Craw, D., Upton, P., Waters, J., Wallis, G. 2017. Biological memory of the first Pleistocene glaciation in New Zealand. Geology 45: 595-598.

Czenze, Z.J., Brigham, R.M., Hickey, A.J.R., Parsons, S. 2017. Cold and alone? Roost choice and season affect torpor patterns in lesser short-tailed bats. Oecologia 183: 1-8.

Dale, A.R., Podlesnik, C.A., Elliffe, D. 2017. Evaluation of an aversion-based program designed to reduce predation of native birds by dogs: An analysis of training records for 1156 dogs. Applied Animal Behaviour Science 191: 59-66.

Dalziel, A.E., Sainsbury, A.W., McInnes, K., Jakob-Hoff, R., Ewen, J.G. 2017. A comparison of disease risk analysis tools for conservation translocations. EcoHealth 14: 30-41.

Di Virgilio, G., Laffan, S.W., Nielsen, S.V., Chapple, D.G. 2017. Does range-restricted evolutionary history predict extinction risk? A case study in lizards. Journal of Biogeography 44: 605-614.

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News from NZES council

Complied by Cate Macinnis-Ng

Date for the AGM

The 2017 annual general meting will be on Tuesday 28th November at 7.45 pm (NZ time) at the EcoTas2017 conference venue in the Hunter Valley, NSW. We will have further information about the AGM in the September newsletter.

Council vacancies

We have some vacancies available on council for the coming year. All positions will become vacant at the AGM and some councilors and other office bearers will

be standing to be re-elected, but there will also be some current council members stepping down or finishing their terms. At this stage, we are interested in finding a secretary and a postgraduate student council member. If you are interested in getting involved with council, please contact a current council member for further information. Our meetings are several times per year and we are a friendly bunch, always interested in fresh contributions.

New Zealand Journal of Ecology page charges

Due to the increasing cost of journal production, we will be increasing page charges for the journal to $25 per page for members and $40 per page for non-members. Papers that have already been submitted will be charged at the existing rate, but all new submissions will be charged at the new rate. Effective immediately.

Member survey

We are currently preparing a member survey that we will be circulating in coming weeks. Keep an eye on your inbox for the link – we are really interested in finding out what our members (and non-members) think about the activities of NZES.

Conference update

Planning for our combined annual conference with the Ecological Society of Australia is developing nicely with a great scientific programme and some fun social events. Abstracts close on 14th July and registration opens soon. Keep an eye on the website for updates http://ecotas2017.org.au/. If you would like to carpool between Sydney airport and the conference venue in the Hunter Valley, please email Cate Macinnis-Ng on c.macinnis-ng@auckland.ac.nz with your name, email and indicate whether you are 25+ and willing to hire and drive a car with some passengers (who will contribute towards the cost).

As the venue is outside a capital city, accommodation options will be villas at the conference centre with provision for camping onsite (byo tent). The number of camp sites will be capped so get in quick if you want this option. More details on the website http://ecotas2017.org.au/registration/accommodation/

Key dates for your diaries

Call for abstracts close: 14 July 2017

Conference earlybird registration close: 15 September 2017

NZES 2016 AGM minutes

New Zealand Ecological Society 63RD AGM, 21 November 2016, Claudelands Convention Centre, Hamilton, 12.35 – 1.50pm.
Minutes taken by Sandra Anderson

Present: **Members (35):** Clayson Howell, Sandra Anderson, Tim Curran, George Perry, Chris Bycroft, Gill Rapson, Cate McInnes-Ng, Robyn Simcock, Laura Young, David Norton, Bruce Clarkson, Shona Myers, Carol West, Pascale Michel, Mick Clout, Susan Timmins, Mel Galbraith, Jon Terry, Debra Wotton, Olivia Burge, Lisa Denmead, Yanbin Deng, Kate McAlpine, Simon Moore, Cheryll Krull, Jacqueline Beggs, Angela Simpson, Dave Kelly, Tim Park, Elizabeth Morrison, Paul Blaschle, Bev Clarkson, Jon Sullivan, John Innes, Weihong Ji
Non-members (2): Colin Meurk, Debs Martin
Apologies: Jamie Wood, Fleur Maseyk

Minutes of New Zealand Ecological Society 62nd AGM
Susan Timmins moved that the minutes from the 2015 AGM be accepted as a true and correct record, seconded Chris Bycroft, carried.

President's report (Clayson Howell)
Kia ora koutou, kia ora koutou katoa. I'm proud to present the presidents report for 2016. Its 18 years since I attended my first NZES conference in Dunedin in 1998. I still remember the mini-van of students, encouraged by Dave Kelly to make the road trip from Christchurch. I had a great time at that conference, and at all I've attended since. I've always been impressed by the breadth of knowledge of delegates, and the willingness to share ideas and welcome new members.

In the past year, I've been very well supported by my colleagues on the NZES Council. In particular, from immediate past-president Chris Bycroft, who has also taken on the role of Treasurer. I would also like to acknowledge the hard work and wise council of Debra Wotton, Tim Curran, Fleur Maseyk, and Sandra Anderson. Though he cannot make this meeting, the quiet achiever of our group is without doubt Jamie Wood. Jamie has quickly learned the mechanics of our website and has resolved several ongoing membership issues.

I would also like to thank Laura Young for her long and significant contribution to the NZES Council. Laura has served 7 years on council in various roles (Councillor, Secretary, webmaster and vice president). We wish you and your family all the best and I know you will continue to contribute to NZ ecology whether on the council or not.

Our journal continues to be published to a very high standard. I'd like to acknowledge the contributions of George Perry and the associate editors in maintaining high quality and providing timely responses to authors. For many years, Landcare Research has provided technical editing for no charge to NZES. Unfortunately, they have been unable to continue this service, but we have now secured the services of a technical editor for a competitive rate. Thanks to Cate Macinnis-Ng for her work her work in producing the newsletter. Cate has revised the format of our newsletter to make production simpler, but I would like

to acknowledge Jeremy Rolfe for providing a very high-quality layout over many years.

There have been several tough years for the society in terms of finances. The treasurers' report will contain further details. Unfortunately, one of the skills that most of our ecologists lack is website development. The website is obviously an integral part of the day to day running of the society, but the costs for re-development were higher than any of us would have liked. If there are any members who do have these skills and are willing to contribute, then please don't hesitate to contact the council.

I would like to acknowledge the organisers of our 2015 conference Dave Norton and Laura Young. It was a fantastic conference, and an impressive profit was promptly returned to the society. The annual conference is obviously one of the major highlights each year. This year Bruce Clarkson and his team have put together a stimulating conference. I am also looking forward to the joint conference with the Ecological Society of Australia (ESA) in 2017. This will be the third time the NZES is held in Australia. I encourage you all to consider making the trip to Polkobin, in the Hunter Valley, NSW, Australia in November 2017 to support this trans-Tasman linkage.

One of the most successful conferences NZES has ever held was "Feathers to Fur". Papers presented at this conference generated a special issue of our journal. For ecologists, one of the most notable announcements of 2016 was the government's support of the Predator Free 2050 goal. Whether New Zealand can make the transformational changes required by 2050 to go from "Fur to Feathers" remains to be seen. Personally, I have my doubts, but I am confident that NZES members have a vital role to play. I encourage all members to promote the application of sound ecological science and try and prevent the goal becoming dominated by personal or political agendas.

One of the things I enjoy most about our conferences is the warmth and friendship that is so evident among members. Though we do not always agree, disagreements are invariably handled in good spirits. NZES does feel like an extended family. This year we are saddened to have lost Henry Connor and Brian Bell, who were well known to many of our members. Finally, with the recent earthquakes we have been reminded yet again that New Zealand is a dynamic country, but the downside is that we live on shaky ground. Stay safe everyone and enjoy the rest of the conference. Tēnā koutou, tēnā koutou, tēnā tātou katoa.

Clayson Howell moved the Presidents report be accepted; seconded Mel Galbraith

Election of Officers.
Nominations for officers were called.

President: Clayson Howell nominated by Susan Timmins, seconded Tim Curran. Clayson accepted the nomination, carried.
Vice President: Laura Young is stepping down from this position. Cate McInnes-Ng nominated by Laura, seconded George Perry. Cate accepted, carried.

Secretary: Sandra Anderson nominated by Clayson Howell, seconded Dave Kelly. Sandra accepted, carried.

Treasurer: Chris Bycroft nominated by Tim Curran, seconded Carol West. Chris accepted, carried.

Councillors: Debra Wotton was re-elected for a 2nd 2-year term, and Fleur Maseyk, Jamie Wood, and Tim Curran all elected for a 2-year term, at the 2015 AGM. All have indicated they wish to continue, so no elections are required this year.

Expressions of interest were called for 2 ex-officio positions, to be considered at the next council meeting

1. A Membership Officer to drive membership, promote the society and provide services to membership
2. A Submissions Officer to speak out on issues of importance to the society.

Expressions of interest were also called from members with website expertise to contribute to the maintenance and upgrading of the NZES website, to save costs to the society.

Kauri Trustees.

Jacqueline Beggs and Mick Clout are the current external trustees; Mick is offering to step down.

The procedure for appointing external trustees (2) requires that they are NZES members (so known to and trusted by the society) but not on council. The position can be vacated after 1 year but is ideally a 4 year term, offset by 2 years to avoid both trustees changing at the same time. Checks and balances are ensured to some degree by the council members also being trustees of the fund. Nominations can be sent to council before the AGM, and are treated in the same way as for council positions.

A call was made for Kauri Fund trustee nominations.

Len Gilman had showed interest in the position at the 2015 AGM and been re-contacted, and confirmed he was happy to stand as trustee. Len was nominated by Clayson Howell, seconded Shona Myers. Shona spoke in support of Len (in his absence) as head of the Ecology programme at AUT.

Dave Kelly was nominated by Chris Bycroft, seconded Debra Wotton. Dave Kelly spoke in recognition of the stewardship required to safeguard and effectively managed this fund.

The nominations were passed to a vote - majority vote in favour of Dave Kelly.

Official reports

Treasurers report (Chris Bycroft)

Chris started by providing an update of the current accounts as of 16 November 2016.

Account balances

	16/11/2016
NZES Cheque	8808.65
NZES Savings	32053.55
Barlow Fund	5253.74

Kauri Fund	10583.20
Westpac *	1661.73
Barlow Term Deposit	70,136.03 (matures 7 April 2017)
Kauri Term Deposit	66,258.26 (matures 7 April 2017)

Grand Total 194,755.20

We are in a much better situation than we were in at the end of 2015, mostly due to a larger than expected profit from the conference in Christchurch in 2015. Chris commented that a large portion of the money in the Kauri Fund and Barlow funds have been put into 12 month term deposits, to earn a higher interest than is available in a savings account. The money and interest will be returned to these accounts when the term is completed. In 2016, we have had an additional cost of technical editing of the *New Zealand Ecological Society Journal.* This had been covered in the past by Landcare Research. We are now paying the Secretariat by the hour, rather than a standard monthly fee, and this has reduced this expense for the society.

Chris then the presented the audit report for the year ending 31 December 2015, which is the main item that needs to be approved at the AGM as part of the Treasurers report. Key parts of the audit are presented below:

New Zealand Ecological Society (Inc.)
Statement of Financial Performance for the Year ended 31 December 2015

	2015 $	2014 $
REVENUE		
Membership	43,819	31,291
Conference	6,753	-
Interest Received	5,072	6,275
Journal Subscriptions	5,403	9,101
Pages Charges	6,768	6,407
Sundry Income	9,891	866
Supporters of Tiritiri Matangi - Journal Contribution	-	(930)
Total Income	**77,706**	**53,010**
Less Expenses		
Accountancy Fees	2,500	2,500
Audit Fees	2,500	2,500
Awards	12,345	3,117
Conference	7,940	11,140
General Expenses	2,194	1,147
Editor Stipend	8,000	5,000
Illustrations	975	2,079
Interest	1	3
Journal Promotions	18,816	27,971
Kauri Grant	4,795	3,824
Barlow Grant	2,500	-
Printing, Stamps & Stationery	-	464
Secretariat	10,623	10,651
Subscriptions	1,500	1,500
Travel - National	1,369	3,426
Web Site	5,424	640
Total Expenses	**81,482**	**75,962**
Net Deficit Before Depreciation	(3,776)	(22,952)
Less Depreciation Depreciation as per Schedule	8,474	7,410
NET SURPLUS/(DEFICIT)	**($12,250)**	**($30,362)**

New Zealand Ecological Society (Inc.)
Statement of Movements in Equity For the Year ended 31 December 2015

	2015	2014
	$	$
EQUITY AT START OF YEAR	178,707	209,070
SURPLUS		
Net surplus/(deficit) for the period	(12,250)	(30,362)
Total recognised revenues & expenses	(12,250)	(30,362)
OTHER MOVEMENTS		
Transfers to Barlow/Kauri Funds	-	(1)
EQUITY AT END OF YEAR	$166,457	$178,707
MOVEMENTS IN RETAINED EARNINGS		
Retained Earnings at start of year	10,403	36,012
Net surplus/(deficit)	(12,250)	(30,362)
Transfers to Barlow Fund	(423)	(2,320)
Transfers to Kauri Fund	18,610	7,073
Retained Earnings at end of year	16,340	10,403
MOVEMENTS IN RESERVES		
Barlow Fund Opening Balance	74,079	71,759
Transfers from Retained Earnings	423	2,320
Barlow Fund balance at end of year	74,502	74,079
Kauri Fund Opening Balance	94,225	101,299
Transfers from Retained Earnings	(18,610)	(7,074)
Kauri Fund balance at end of year	75,615	94,225
	$166,457	**$178,707**

New Zealand Ecological Society (Inc.)
Statement of Financial Position As at 31 December 2015

	2015 $	2014 $
CURRENT ASSETS		
ANZ Current Account	12,751	1,156
Westpac Trust Cheque	3,061	138
ANZ Serious Saver - Barlow Fund	74,502	74,029
ANZ Serious Saver	354	106
ANZ Serious Saver - Kauri Fund	75,615	94,225
GST Refund Due 1(b)	1,997	3,368
Accounts Receivable	1,611	757
Total Current Assets	169,891	173,779
NON-CURRENT ASSETS		
Fixed Assets as per Schedule	13,031	21,505
TOTAL ASSETS	182,922	195,284
CURRENT LIABILITIES		
Accounts Payable	16,465	16,577
TOTAL LIABILITIES	16,465	16,577
NET ASSETS	$166,457	$178,707
Represented by;		
EQUITY		
Barlow Fund	74,502	74,079
Kauri Fund	75,615	94,225
Retained Earnings	16,340	10,403
TOTAL EQUITY	**$166,457**	**$178,707**

Items of discussion from the 31 December 2015 Audit report.
It was pointed out that the $12,000 loss in 2015 was due largely to website development and revenue loss at the 2014 conference; equity has increased since then.

Clarification was sought from members re the meaning of 'journal promotions' itemised in the report – Chris and Clayson confirmed this was the terminology used to cover the costs of producing the journal. A query was also made re whether alternative savings options might return a better interest rate on deposit accounts – Chris confirmed that the society had obtained favourable term deposit rates for both accounts and these were performing relatively well at a time when interest rates are low.

Other queries were accounted for by the mismatch between the timing of the conference profit return (next year) and the statement of accounts at the AGM (end of preceding year). There was general agreement by members to adhere to the resolution of retaining sufficient money in the bank to cover a years running expenses.

Chris Bycroft moved the Treasurers report (Audit report for year ending 31 December 2015) be accepted, seconded Clayson Howell.

Journal editors report (George Perry)

I am pleased to be able to report on the activities of the NZJE in 2016. The journal is in good health, with a steady number of submissions received in 2016 (54 to the 16th November); of these 60% (22/54) were sent to review. By way of comparison the journal received 45 and 73 submissions in 2015 and 2014 respectively. In 2016 two standard issues and one special issue have been published comprising a total of 45 (21 + 9 + 15) articles. Vol. 41 (1) is finalised and currently in press, with 14 articles already available online.

The journal has seen some significant changes this year, with Landcare Research no longer able to provide technical editing, Katherine Russell has taken on this role on a contract basis. Katherine provides an excellent job, but, of course, this does come at a financial cost to the Society (as outlined in the Treasurer's report). I took over the role of scientific editor earlier this year after a transitional period with Jo Monks - I thank Jo for her service to the journal as editor and her support as I took over the role - I am pleased that Jo agreed to remain on the editorial board. There have been other changes on the editorial board too with Kerri-Anne Edge and Margaret Stanley stepping down and Tammy Steeves joining it - my thanks to Kerri-Anne and Margaret for their dedicated work for the journal. The journal has joined CrossRef and so we are now able to allocate DOIs to each article - this makes citing `in press' and `on-line early' articles much easier (and reproducible) and is important for citation tracking. This membership also means that metadata for each article is sorted in a wider range of scientific databases. Finally, the 2015 impact factor (IF) for the journal was 1.247, which represents an increase from 1.057 (2014); by way of comparison NZJ Botany has 0.806, NZ J Zoology has 0.758 and Austral Ecology has 1.598.

The face of academic publishing is changing rapidly with more and more journals moving to online publication only and to rolling issues. Currently the journal effectively offers open-access with articles freely available online. A major cost to the journal (and hence the Society) is the printing of hard-copy issues (see Treasure's report). Thus, we are assessing the costs (e.g. potential loss of institutional subscriptions) and benefits (reduced financial costs) of moving to online only publication. In a similar vein, the NZJE is one of the few NZ journals not to have moved to being published by one of the larger publishers. Again, such a move would bring both costs (potential loss of autonomy) and benefits (financial return and support) and requires close consideration.

In large part, the success of the journal is due to the superb support I receive from the editorial board and the referees. Compared to other (international) journals I am involved with the standard of the editorial and review process is exemplary. I am grateful to the support of the editorial board, the reviewers and the Society for their continued support.

Discussion at the AGM re the cost of printing the journal, and the advantage of retaining a high quality layout given the current success of the journal – also the whether any decision to go through a publishing company would entail the journal going from open to closed source.

Susan Timmins moved the journal editor's report be accepted, seconded Mick Clout.

Webmaster and Social Media report (prepared by Jamie Wood, presented by Clayson Howell)

Website
Over the past year we have continued to receive a fairly constant flow of new jobs and PhD positions that have been posted to our website. There have been no major issues with the website; however there have been a number of minor bugs and updates that have required input from Fuzion to fix. This is all part of ongoing maintenance of the website.

Cate has worked with Fuzion to investigate the potential for making newsletters more easily searched and organised on the website. The *New Zealand Journal of Ecology* website has also been updated to allow doi to be displayed alongside journal articles. DOI will be standard for articles published from 2016 onwards.

Some statistics for the website for the past year (1 December 2015 to 9 November 2016):

- 37,711 sessions, during which 25,795 different users had 84,370 page views
- Top countries visiting the website (by sessions) were NZ (57.5%), USA (10.3%), UK (4.5%), Australia (4.4%) and China (2.7%)
- Within NZ, most sessions were from Auckland (17.2%) followed by Christchurch (10.5%), Wellington (8.8%), Hamilton (3.5%), Lincoln (3.0%) and Dunedin (2.4%).
- Most page views were of the home page (16.9%), but from here the NZ Journal of Ecology was most popular (7.7%) followed by upcoming meetings (3.8%), jobs (2.7%) and links (2.4%) pages.

Top viewed abstracts in the *New Zealand Journal of Ecology* over the past year were:

- Ann Brower (2016) Forum Article: *Is collaboration good for the environment? Or, what's wrong with the Land and Water Forum?* (488 views)
- Grant Morriss *et al.* (2016) Research Article: *Dead birds found after aerial poisoning operations targeting small mammal pests in New Zealand 2003–14* (453 views)
- James Russell & Keith Broome (2016) Review Article: *Fifty years of rodent eradications in New Zealand: another decade of advances* (388 views)
- John Parkes *et al.* (2017) Forum Article: *Past, present and two potential futures for managing New Zealand's mammalian pests* (344 views)
- Monica Peters *et al.* (2016) Review Article: The current state of community-based environmental monitoring in New Zealand (314 views)

Membership database
A major issue that was identified this year was members having duplicate membership records. The cause of this was thought to be people who received reminder emails, but upon clicking the link to renew their membership found it didn't work and so signed up again from scratch. Upon further investigation, it was found that the renewal links were only set-up to be active for 7 days, and so

we have extended this to 90 days in an attempt to prevent this from happening in future. If duplicates do still occur, we have set up a system whereby we can manually search for duplicate records and merge these together.

Twitter
On July 24th 2016 the twitter account that had been set up for the 2015 conference was repurposed, and is now the official twitter account for the New Zealand Ecological Society (@nzecology). The account now has over 600 followers. Postings on the twitter account alert followers when new articles are posted online in the *New Zealand Journal of Ecology*, however most other news items posted on the twitter account are cross-posted on the facebook page. Twitter statistics are measured as engagements (i.e. when a user actually clicks on a link) or impressions (when a tweet appears on a user's news feed). The following are monthly statistics for impressions of @nzecology tweets: August, 941; September, 3400; October, 1300. The number of impressions fluctuates significantly based on the number of tweets posted, number of followers, and number of retweets each tweet gains.

Facebook
2,425 follow the New Zealand Ecological Society on facebook, an increase of 229 since the last council meeting in July. To give some idea of the monthly activity on the facebook page, within the 28 days preceding the writing of this report the page had reached (i.e. posts appearing on people's newsfeeds) 8815 people, and there had been 1644 engagements with posts. Due to the large number of followers and the significant interaction with posts on this page, it may be worth considering in future how these interactions could be translated into new memberships.

Clayson Howell moved the report be accepted, seconded Tim Curran

Membership report (presented by Sandra Anderson)

Membership remains steady, with approximately 1/3 of members unwaged. There has been a 10% decrease from the preceding year in the proportion of members paid up to date.

Membership summary as at 09/11/16

	TOTAL	COMPLIMENTARY	PAID TO DATE	UNPAID Due
FULL	399		321	78
OVERSEAS FULL	10		8	2
UNWAGED *	172		101	71
OVERSEAS UNWAGED	6		4	2
TASMAN LINKAGE	5		4	1
HON/HON LIFE	4	4	NA	NA
TOTAL – Nov 2016	**595**	**4**	**438 (74%)**	**154**
TOTAL – Nov 2015	595		489 (84%)	92

Honorary Life Membership
A nomination for honorary life membership of NZES was received and required approval at the AGM. The nomination for Shona Myers was made by Clayson Howell, seconded by Debra Wotton.

Shona has made an enormous contribution to the New Zealand Ecological Society. We firmly believe she would be a worthy recipient of Honorary Life Membership, and this would be an excellent way for her contribution to be recognised widely by the society. Her contribution has included around 13 years continuous input to the council and effective governance of the society. She is hardworking, dedicated and responsive and has often clarified the correct process for the council to take. Her elected roles have included five and a half years as Secretary and two and a half years as President. Shona has coordinated and written numerous submissions on behalf of the society, including a recent one on Climate Change. In the last few years Shona has still been willing to contribute, so Council has co-opted her as a representative of Intecol, an important Global Initiative to which Shona was elected President in 2013.

Shona has been unwavering in her support for the NZES, she is a treasure, and has been instrumental in running the society for over a decade. It is time this service is acknowledged.

Council Detail:

2003/2004 to 2006/2007 (3.5 yrs) Secretary
2006/2007 to 2008/2009 (2.5yrs) President
2009/2010 and 2010/2011 Immediate Past President
2011/2012 and 2012/2013 (2 yrs) Secretary
2013/2014, 2014/2015 and 2015/2016 co-opted onto council as Intecol representative.

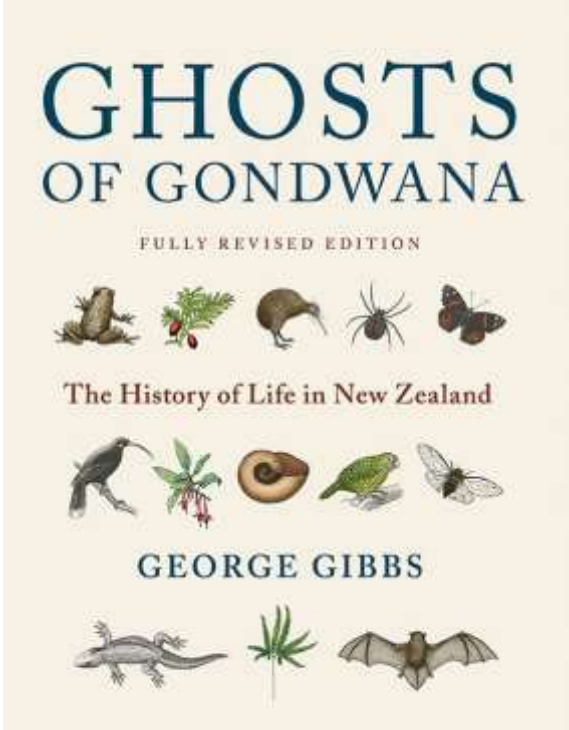
The nomination was carried by a unanimous vote in favour.

General business
A query was made re who would be representing NZES on the organising committee next year for the joint conference in Australia. Clayson Howell proposed Cate McInnes-Ng for this task and she accepted. Members were encouraged to attend the upcoming joint conference with the Ecological Society of Australia at Cypress Pines Resort, Polkobin (NSW) 26th Nov to 1st Dec 2017.

BOOK REVIEW: GHOSTS OF GONDWANA: THE HISTORY OF LIFE IN NEW ZEALAND

(FULLY REVISED EDITION)

George Gibbs. 367pp.
Potton and Burton, ISBN 978-0-947503-08-6, 2016



Reviewed by Adrian Paterson

A few weeks ago I was in the Southern Alps with a first year field trip where we look at the geology of the region and what it tells us about the biological history and current ecological processes of the area. Many students are energised by this look at the past and present and wanted to know where they can read more about New Zealand biogeography. It's an easy answer. Get hold of George Gibb's *Ghosts of Gondwana*. It's been something I've been saying for a decade.

Gibbs has now fully revised his 2006 book *Ghosts of Gondwana: the history of life in New Zealand*. The first edition was an excellent introduction to the biological and geological history of New Zealand. So much information was packed into that book, and it was so elegantly packaged with great diagrams and frequently stunning photographs. Even the paper it was printed on was first rate! Perhaps the best judge of the worth of a book like this is by how much it is read. My copy was constantly borrowed over the last decade (in fact whoever borrowed it last has neglected to give it back!).

With the revised edition we get what feels like the Director's cut. The book is 50% longer. The dimensions are larger, the paper quality is sumptuous. There are more photos and diagrams and more examples. Research over the last decade has been added. This will be one of the nicest looking books that you put on your shelf.

The book is divided into four sections. The first section is a short introduction to what makes New Zealand unique. The second section primarily looks at the tools by which we examine and reconstruct the past (fossils, phylogenetic trees, biogeography and so on). This section is quite technical but well explained and welcomed because of it. The third section is an overview of the geological changes over the past and the impact on the NZ biota. The final section looks at how evolution has been at work in our shaky isles. This is my favourite part of the book. There are lots of clear, well described examples of evolution shaping taxa from singing in cicadas to moa browse and plant traits. I can see much of this going into future lectures.

The main change since the first edition is to remove some of the focus on the recent past, particularly on phylogeography. This is a good move that allows the focus to be on the distant past that shaped our biota. One good consequence is that this has emphasised the concept of Australis (basically east Gondwana) that seems like it should have had more visibility since the first edition (in a similar way that Zealandia has become a major part of our lexicon over the last decade).

Despite all of the good content in this book there were a couple of main areas of frustration. The first was the prominent and consistent mention of panbiogeography and the work of its practitioners. I won't go into the specific arguments against this approach to understanding species distributions as George makes the main point himself when he says that as panbiogeographers' "arguments are based on a different kind of logic that is not amenable to scientific testing, they are disregarded by many, especially the molecular proponents, as being non-scientific" (p. 170). Exactly. Hence, it is frustrating to see that this approach is then scattered throughout a book that is focused so heavily on scientific thinking.

The second area of frustration was with the attitude towards molecular data and the molecular clock in particular. Molecular data is now a common tool in ecology and evolution studies. In biogeography it is the main tool. It is disconcerting to be told that there are scientists working with molecules "that would scarcely be able to recognise a living example if they met one in the field" (p. 48). I can't say that I have ever come across anyone like this and it feels fairly disrespectful to those that make use of molecular tools in their work (which is most people in this area these days).

The view on molecular clocks generates even more frustration. Being able to (roughly) estimate timing of last common ancestors has revolutionised biogeography. For example, the term 'Gondwanan' can be used in at least three different ways. First, a taxon is Gondwanan if species are currently found in former Gondwana landmasses (pattern). Second, a taxon is Gondwanan if the lineage has been continuously present in New Zealand since Zealandia broke

away from Gondwana (or Australis), say 55-80 million years ago (pattern and process). Third, a taxon is Gondwanan if it is descended from a lineage that was present in Gondwana (Australis) prior to the break-up but successfully dispersed to New Zealand after Zealandia broke away from Gondwana and sank, i.e. in the last 20 million years (pattern and process). The only way to test between the second and third explanations is through estimating time of divergence. If a New Zealand lineage has a common ancestor with an Australian lineage dated at around 5 million years ago then the lineage had to have dispersed. If a New Zealand lineage has a common ancestor with an Australian lineage dated at around 75 million years ago then the lineage is likely to have been present in Zealandia/New Zealand for this time. Timing is everything in answering which meaning is accurate.

Molecular clocks, even when relaxed, have error. But the error is not such that you cannot tell the difference between 50 and 10 million years ago. Throughout the book we see a lot of distrust with regards to the molecular clock with comments like 'whether it can be trusted or not' (p. 98), 'its flaws are seldom debated' (p 151), 'a questionable calibration process' (p. 180) and so on. As Gibbs sums up the book he says 'I have used maps of the past, patterns of world distributions on those maps, systematics and phylogenetics, tectonic geology, the fossil record, molecular data, even the clock hypothesis with all its faults' (p. 315). It is worth noting that ALL of the things mentioned here have error associated with them, most with errors at least as broad as the molecular clock!

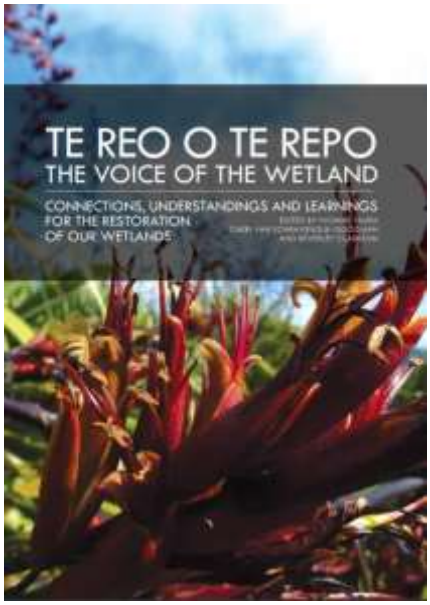
In discussing the above concerns I feel like I am coming across as overly negative. Overall, this is a good and useful book. I am considering whether to make it a text for my first year course. The book is definitely pitched at a suitable level for undergraduates, those who want to learn more about New Zealand, and offers much to ecologists who want an evolutionary and geological background to their focus ecosystems. My workplace will soon be moving to an open office environment and we academics will only have space for about 10 books at our desks. Will *Ghosts* make the cut? Absolutely (probably so that it can be lent out to others!). If you have any interest in the history of New Zealand from a biology or geology perspective you should get this book. In fact, buy two copies and give one away. The recipient will thank you. If you have a copy of the first edition, do you need to get this one? Absolutely. The last decade has been one with a lot of work in this area (Oligocene Drowning, Miocene mammal fossils, relaxed clocks) and for the update alone it is worthwhile. Where to next for George? *Ghosts of Gondwana* is definitely not the last word on evolution in New Zealand. Perhaps there is scope for a sequel: the *Apparitions of Australis* or the *Zombies of Zealandia*?

Te Reo o Te Repo – The Voice of the Wetland, a cultural wetland handbook

Yvonne Taura[1]
Cheri van Schravendijk-Goodman[2]
Beverley Clarkson[1]

[1]Manaaki Whenua – Landcare Research, Hamilton
[2]Swampfrog Environmental and Tree Consultants Ltd, Hamilton

Te Reo o Te Repo – the Voice of the Wetland, was released as an online resource in February 2017.



As Aotearoa New Zealand has lost more than 90% of original repo (wetlands), Māori are becoming increasingly concerned about the mauri (life force) of this culturally significant ecosystem. They have also struggled to have their voices heard within wetland management. Through the Wetland Restoration Programme, Manaaki Whenua – Landcare Research and Waikato Raupatu River Trust (WRRT) co-designed, co-developed, and co-implemented a variety of projects that worked towards the restoration of repo (wetlands) throughout the Waikato rohe (region). As part of the programme, Manaaki Whenua and WRRT produced the online cultural wetland handbook, collating best practice restoration techniques from throughout Aotearoa to increase the health and well-being of repo. The handbook highlights a range of mahi (work) undertaken by whānau (families), hapū (subtribes), and iwi (tribes) and includes processes for facilitating renewed and vibrant connections between whānau and their repo, understandings of cultural resources, and learnings from case studies on repo restoration, cultural indicators, and monitoring. The handbook aims to enhance and protect cultural wetland values to share with tangata whenua throughout the motu (Aotearoa) and to assist other members of the public understand the cultural priorities for repo restoration.

But, most important, *Te Reo o Te Repo* is about sharing stories with each other. The articles in the handbook are a small sample of research, contributed by kairangahau (researchers) from all over the motu. From Northland to the deep South, tangata whenua, and kairangahau Māori and non-Māori are working together to enhance and protect cultural values of repo. Many articles discuss the personal journey taken by kairangahau

and the whānau involved to promote the connections, understandings, and learnings for the restoration of repo in their rohe.

The online handbook is intended to be a living document. We hope to receive additional stories from across the motu, so that future editions can continue to be relevant and appeal to the next generation of kaitiaki (guardians), kairangahau, and environmental leaders.

Make sure to check the online resource at www.landcareresearch.co.nz/te-repo. Articles about *Te Reo o Te Repo* can be found in both Te Hookioi – Waikato-Tainui tribal magazine, and Discovery – Manaaki Whenua bi-annual newsletter.

Mauri Ora!

Shared nostalgia; Working on the Insects of New Zealand playing card project

Leilani Walker

As with pool, I suspect that being good at cards is the sign of a misspent youth. I blame my grandmother who discovered that, by teaching her moko a handful of card games, a single deck of cards would keep her charges quiet for hours regardless of whether all nine were over or just one sick tot. Jokers and aces eroded rapidly as they passed from hand to hand to hand at the family bach and a fair number of novelty packs passed through during my childhood. One of these was a Marvel Superhero pack. I knew only a handful of the characters featured (this was before superhero movies saturated the cinemas). But by the end of the summer holidays those faces were burned into my retina. In this way, when the idea of introducing people to our native insects by producing a set of playing cards popped into my head fully formed, it seemed so obvious to me that I initially assumed that it must have been done already.

As a student of entomology, I had long suspected that most people don't know much about our native insect fauna. I had also been subjected to more than my fair share of revolted expressions from people at parties upon telling them what I studied. To confirm my suspicions before embarking on the card project, I ran a poll on social media. I asked people to name ten New Zealand insects and ten New Zealand birds (being deliberately vague in my wording to avoid the native vs. endemic question). I was an incredibly generous marker but, even then,

more than one hundred people could name ten birds while on average they could only name 5-6 insects.

This poll evidenced a clear gap for the cards to fill. We hoped that a deck of cards featuring native insects could be a way of getting the names and "faces" of more native insects into public circulation and that we could illustrate the diversity of our insect fauna through simple juxtaposition within a deck. But for me an equally important objective of the project was to engender affection for our native insect fauna. If we want people to advocate for our environment and native fauna, a love for those things will be the strongest motivator.

Emma Scheltema is a local science illustrator whom our lab has commissioned to produce illustrations for several publications. We had been working together on a picture book idea (which went nowhere) so I asked her if she'd like to be the artist for the project. I'm not sure whether I would've gone ahead if she'd said "no". Together we generated a proposal and put it to the Entomological Society of New Zealand who enthusiastically provided the seed money from their publishing fund to cover manufacture and Emma's commission. Fast forward a year and we had manufactured one thousand packs of cards. The face of each card features a different illustrated, endemic insect species with representatives from across the orders and including the carpet moth, *Xanthorhoe bulbulata*, which was recently declared extinct. We sold out our stock within two months of their arriving in the country and have since released a second edition which includes the common and scientific names of each species on each card.

A tiny part of me resents that our frankly capitalistic approach to education has proved so successful. Nevertheless, the creative process was, for me, one of empathy. Bridging the gap between academic and public understanding of entomology required that I rediscover my entirely emotional love for the natural world, the foundation for academic passion. This helped us to determining how best to find a meeting point between a layperson's understanding and my own. For this reason, we opted for "semi-realistic" illustrations and kept the insects within their own environment. We selected species which are easily found, iconic in some way or notable for their rarity or life history. We also realised that our modern visualisation of entomology (and indeed natural history) remains Victorian – cabinets of curiosity, Rudyard Kipling, pith helmets and khakis, and densely packed natural history displays. Therefore, we designed the cards to resemble sketches (admittedly, very good sketches) in an explorer's notebook and similarly text was hand written. Meanwhile the card pack and card backs were inspired by Victorian book covers and cigarette cases, and by the concurrent boom of lithographic advertising in the United States.

We were tremendously proud of the product before the stock arrived in the country and were completely blown away with the response once they went on sale. We discovered then that most of the work had been done for us – people were entirely ready to celebrate our invertebrate fauna and required no

convincing by us. It wasn't just children. I received emails from several older members of the public who recounted childhood experiences of looking for insects and our first physical retailers were mainstream gift stores, not museums (they came later).

Emma and I have a couple small schemes cooking for the cards yet but for now we feel immensely privileged for the attention that the cards have received and hope that we have done our bit to raise awareness about the more diminutive members of our native fauna.

I would like to acknowledge the Entomological Society of New Zealand for supporting this project. The second edition of cards is available from our online store *and we have* a list of physical stockists*. We offer discounts for bulk orders and for educators (email* nzinsectcards@gmail.com *to enquire).*

Auckland Pestival

Ben Paris
Senior Biodiversity Advisor, Auckland Council

The inaugural Auckland Pestival was a great success on Saturday 24 June. It brought together over 400 people from some of the 450 community groups to showcase current community-led conservation in Auckland and gather feedback on how council and DOC can support and expand community action. The event also served as a soft launch for our Pest Free Auckland programme.

There was quite a bit of activity on Twitter with various people tweeting (and chirping!) the things they found interesting from the talks. The Twitter chain provided a great summary and can be found by following this link: https://storify.com/NZBatman/auckland-pestival-2017

a)

b)

c)

d)

a) Te Aroha Morehu from Ngāti Whātua Ōrākei iwi talking about the importance of attitudes when working towards a pest free Auckland.
b) Professor Bruce Clarkson presents on the new frontier of urban ecological restoration.
c) Stephen Gee talks on connecting nature across Auckland.
d) Fraser McConnell talks about Squawk Squad, a social enterprise app to get everyone involved in pest control & conservation.

Councillors Penny Hulse and Alf Filipaina and many local board members were in attendance for the whole event; their political leadership and support gave a clear signal that Council is serious about our commitment to our own action and supporting the great work the community is doing.

The energy and commitment amongst attendees was incredible, almost palpable. Attendees were highly engaged throughout the day and the feedback we have received through the text system, and during the week coming, will be used to refine our programme. Presentations are available on Our Auckland: http://ourauckland.aucklandcouncil.govt.nz/articles/news/2017/06/pestival-2017/.

Noticeboard and upcoming conferences

The 6th joint conference of the New Zealand and Australian Ecological Societies is coming up! This will be held in the Hunter Valley, New South Wales from 26 November – 1 December 2017. The theme of the conference is 'Putting ecology to work' so there will be a strong applied ecology focus but there is also a wide range of sessions planned. As the venue is outside a capital city, accommodation options will be villas at the conference centre with provision for camping onsite (byo tent). The number of camp sites will be capped so get in quick if you want this option. More details on the website http://ecotas2017.org.au/

The 12th International Congress of Ecology (INTECOL 2017 Beijing)

will be held in Beijing, China, August 21-25, 2017. As the host of the congress, the Ecological Society of China (ESC) warmly welcomes ecologists, environmental policy makers, and practitioners to join this Congress from all over the globe.

The theme of the congress is "Ecology and Civilization in a changing World" which will focus on harmonious and sustainable development among people, nature, and society in the context of global change.
Thematic topics of the congress:
- Ecosystem services and management
- Global climate change and ecosystem adaptation
- Urbanization and regional environmental change
- Biogeochemical cycling and ecosystem health
- Ecological degradation and ecosystem restoration
- Environmental stress and biodiversity conservation
- Industrial ecology and green economy
- Molecular ecology and evolution
- Landscape pattern, process and sustainability
- Ecohydrology and watershed management
- Paleoecology, ecological dynamics and environmental assessment
- Agroecology, sustainable agriculture and rural development

For more information about the 12th INTECOL International Congress of Ecology, please visit the website: www.intecol2017.org.

The Botanical Art Society of New Zealand (BASNZ) is delighted to announce that New Zealand will be taking part in the 'Botanical Art Worldwide' exhibition organised by the American Society of Botanical Artists and supported by the 'Friends of Auckland Botanic Gardens'.

This inaugural worldwide event, which will take place in many countries simultaneously, will bring together artists, institutions, and the public to highlight the role contemporary botanical artists play in bringing attention to the need of safe-guarding our planet's botanical diversity.

Our exhibition - 'Ngāi Tipu Taketake – Indigenous Flora' will take place from March 30th - 1st July 2018 at the Auckland Botanic Gardens, with the possibility of it travelling to other main NZ cities.

The Botanical Art Society of New Zealand is pleased to call for submissions for this exhibition. Artists interested in submitting paintings are invited to complete the submission form and provide details of their work.

5th NZ Bat Conference Eltham – South Taranaki 27 February to 1 March 2018

The 5th NZ Bat Conference is to be held at Eltham in South Taranaki from 27 February to 1 March 2018. The conference will be based at the Eltham Presbyterian Camp (www.elthamcamp.co.nz).

We will be having the normal round of presentations, discussion groups and open forum, so if there is anything you would like to see included or added, please advise so it can be included. Practical activities (mist netting, harp trapping, fitting transmitters and tracking bats) are planned to be undertaken at Rotokare Scenic Reserve (www.rotokare.org.nz) and on neighbouring private land 'The Totaras'.

The conference will be conducted from lunch Tuesday 27 February to lunch Thursday 1 March, this will allow those that 'have to' to work on the Monday and Friday. Travel for most to/from the conference could then be completed on the Tuesday morning and Thursday afternoon. Most North Islanders should be within a 5 hr drive of Eltham, whilst flights from/to all major South Island airports reach/leave New Plymouth in good time, though an early start might be needed by some. Free transport from/to New Plymouth airport will be provided.

The aim is for the conference to be self-funding, though sponsorship is being sought. We already have a sponsor to underwrite the conference in case of running at a loss but if a profit is achieved it is envisaged that the monies would be held in trust as seed funding for future conferences.

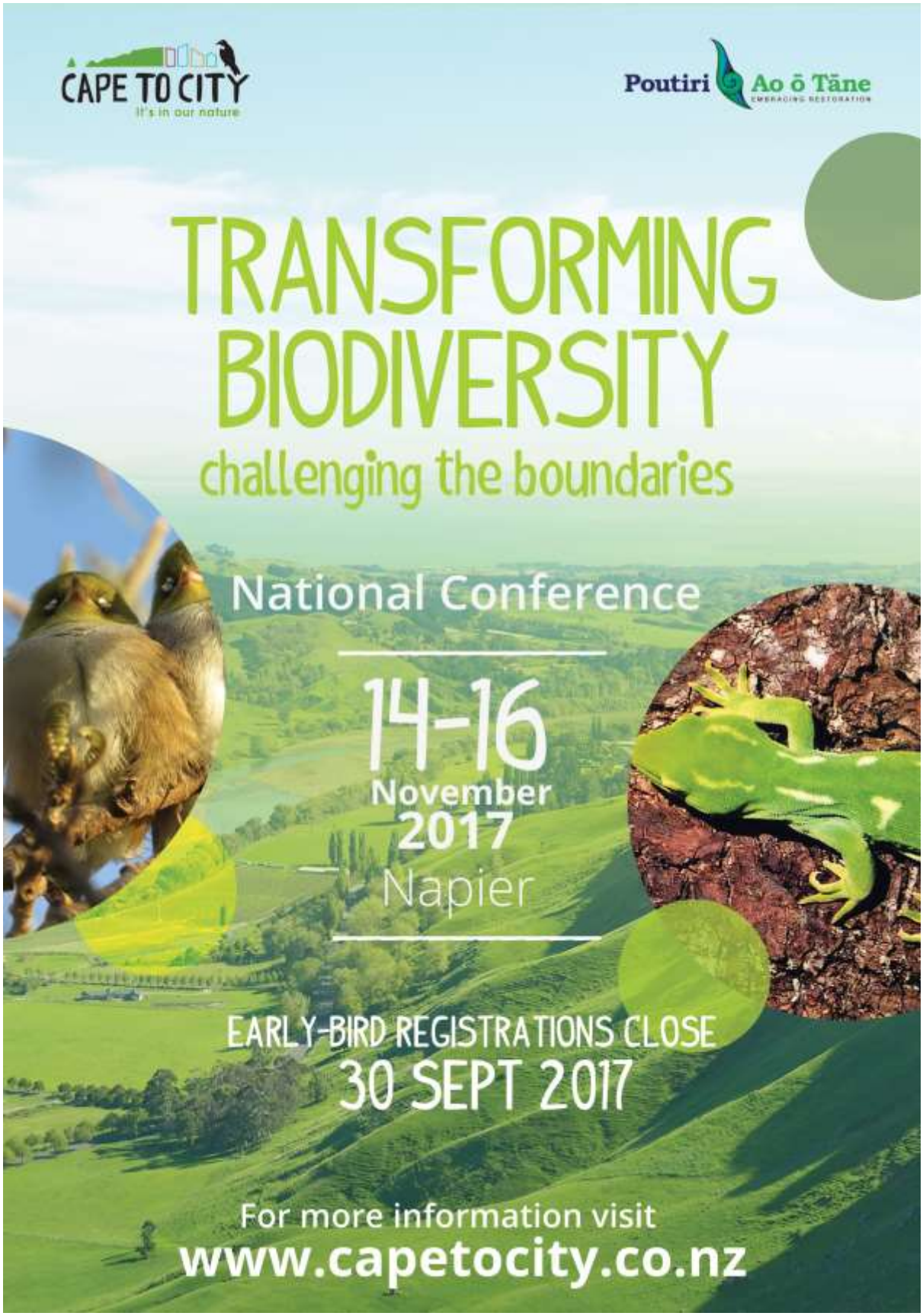
Initial planning is well underway but though most if not all costings are relatively easy to ascertain the issue of working out individual costs is difficult. So, to this end we are asking for a non-binding indication of your likely attendance at the conference. This will allow for more accurate budgeting to be completed and registration costs to be reached before registrations are called for later this year.

Initial costing for those needing to budget would indicate a cost (per person) of under $300 (all inclusive with accommodation, catering and activities), the conference is not registered for GST. Of course, final costings will be dependent on the number attending and any sponsorship gained for the event.

Please reply at your earliest convenience to batconference@xtra.co.nz of your likely attendance/non-attendance at the 5th NZ Bat Conference.

Thank you,

Dave Bell
Conference Organiser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If you answered yes to all of the above, please apply now!

The MBIE-funded People+Cities+Nature project is seeking an enthusiastic MSc student to participate in urban forest restoration research starting November 2017. The project seeks to understand how cities can maximise the efficiency and success of urban restoration plantings.

Applicants must be willing to travel within the North Island.

Please send a brief CV & cover letter to c.kirby@waikato.ac.nz by August 18th.

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Ministry of Business, Innovation & Employment

July 2017

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(Effective from November 2016)

In the first instance, please send postal or e-mail correspondence to:

Secretariat (society office – Susan Sheppard)
NZ Ecological Society Secretariat
PO Box 5075
Papanui
CHRISTCHURCH 8542
Physical Address:
46 Genesis Drive
Edendale, RD 1
CHRISTCHURCH 7671
P: 64 3 318 1056
F: 64 3 318 1061
E: nzecosoc@paradise.net.nz
W: www.nzes.org.nz

President
Clayson Howell
Department of Conservation
PO Box 10-420
WELLINGTON
P: 64 4 471 3113
M: 64 21 973 181
E:President@newzealandecology.org

Immediate Past President
Chris Bycroft
Wildland Consultants
PO Box 7137
Te Ngae
ROTORUA 3042
E:Chris.Bycroft@wildlands.co.nz

Vice President
Cate Macinnis-Ng
School of Biological Sciences
University of Auckland
Private Bag 92019
AUCKLAND
P: 64 9 923 2343
E: c.macinnis-ng@auckland.ac.nz
T: @LoraxCate

Secretary
Sandra Anderson
The University of Auckland
Private Bag 92019
AUCKLAND
P: 64 9 373 7999
E: sh.anderson@auckland.ac.nz

Treasurer
Chris Bycroft
Wildland Consultants
PO Box 7137
Te Ngae
ROTORUA 3042
E: Chris.Bycroft@wildlands.co.nz

Councillors (4)
Tim Curran
PO Box 85084
Lincoln University
Lincoln 7647
Canterbury, New Zealand
E: Timothy.Curran@lincoln.ac.nz
T: @TimCurran8

Fleur Maseyk
The Catalyst Group
PO Box 362
PALMERSTON NORTH 4440
P: 06 358 6300
E: fleur@thecatalystgroup.co.nz

Jamie Wood
Landcare Research
PO Box 69040
LINCOLN 7640
P. 64 3 321 9653
E.woodj@landcareresearch.co.nz
T. @larusnz

Debra Wotton
Moa's Ark Research
14 Tui Road
Raumati Beach
PARAPARAUMU 5032
E: debra.wotton@moasark.co.nz

Journal scientific editors

George Perry
School of Environment
University of Auckland
Private Bag 92019
AUCKLAND
E: Editor@newzealandecology.org

Newsletter editor
Angela Simpson
Wildland Consultants
PO Box 7137
Te Ngae
ROTORUA 3042
E:Newsletter@newzealandecology.org

Webmaster
E:Webmaster@newzealandecology.org